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THE FRUIT-DISEASE SURVEY

W. A. MURRILL

(WITH PLATE 3)

Encouraged by the success of the field meeting on Long Island in 1919 for the study of potato diseases, the American Phytopathological Society decided to hold a similar meeting in 1920 for the study of fruit diseases. The region selected was the Great Valley, extending from Staunton, Virginia, northward into Pennsylvania, one of the richest and best known fruit-growing districts in the United States; and the time was the first week in August, which proved to be a most fortunate selection because of the perfect weather.

Early Monday, August 2, phytopathologists began to arrive at Staunton from all parts of the country, as well as from several foreign countries, until about 75 had assembled; the attendance being further augmented by horticulturists, entomologists, and other specialists. The mornings and afternoons were devoted to inspection work and the evenings to informal discussions of the fungi causing the diseases observed and the various methods of control. No better method could be devised for meeting the problems which pathologists have to face, and, in my opinion, the meeting under discussion was the greatest in the history of plant pathology.

I have prepared a popular account of this survey for the Garden *Journal;* and Dr. G. R. Lyman, who was mainly responsible for its success, has published a brief report on it in the November number of *Phytopathology.* The following paragraph is taken from his report.

August 3 was devoted to a tour of the Staunton-Harrisonburg district in Virginia, and included the inspection of interesting demonstrations of apple root-rot and cedar rust, and comparative dusting and spraying experiments for control of various apple diseases. The party spent August 4 in Berkeley County, West Virginia, noting the effects of cedar eradication, visiting orchards where dusting and spraying experiments were in progress, and inspecting demonstrations of collar-blight and other diseases. Visits were also made to the experimental packing plant at Inwood, and to the West Virginia pathological weather instrument station near Martinsburg. August 5 was spent in the vicinity of Hagerstown, Maryland, and was largely devoted to peach diseases and their control by dusting and spraying, some attention also being given to truck-crop diseases. On August 6, the party visited the Field Laboratory of the Pennsylvania Agricultural Experiment Station at Arendtsville, Pennsylvania, and inspected experiments in progress in that region under direction of the laboratory staff on the control of apple diseases and insects. The conference adjourned at Gettysburg, but on August 7 a portion of the party continued by automobile to Philadelphia, visiting the rich agricultural districts of Lancaster County and inspecting the tobacco experiments in progress there.

Wednesday evening, we were guests of the Chamber of Commerce of Hagerstown, Maryland. After the usual exchange of courtesies, the representatives of foreign countries were called upon for addresses, beginning with Dr. Brierly, of England; after which Dr. Ball, Assistant Secretary of Agriculture, Prof. Symons, of the University of Maryland, and other speakers entertained us until nearly midnight.

Thursday was another full day. We visited truck gardens to study blights, rots, mosaics, tip-burns, etc.; peach orchards to observe the effects of spraying; apple orchards for cedar eradication; and the Antietam battlefield for its historic interest. In the evening, there was a meeting for the discussion of local fruit diseases held under the auspices of the Washington County Fruit Growers, at which Prof. Whetzel discussed dusting and spraying, and Mr. Charles Repp, of New Jersey, outlined some of the difficulties of the commercial fruit-grower of the present day.

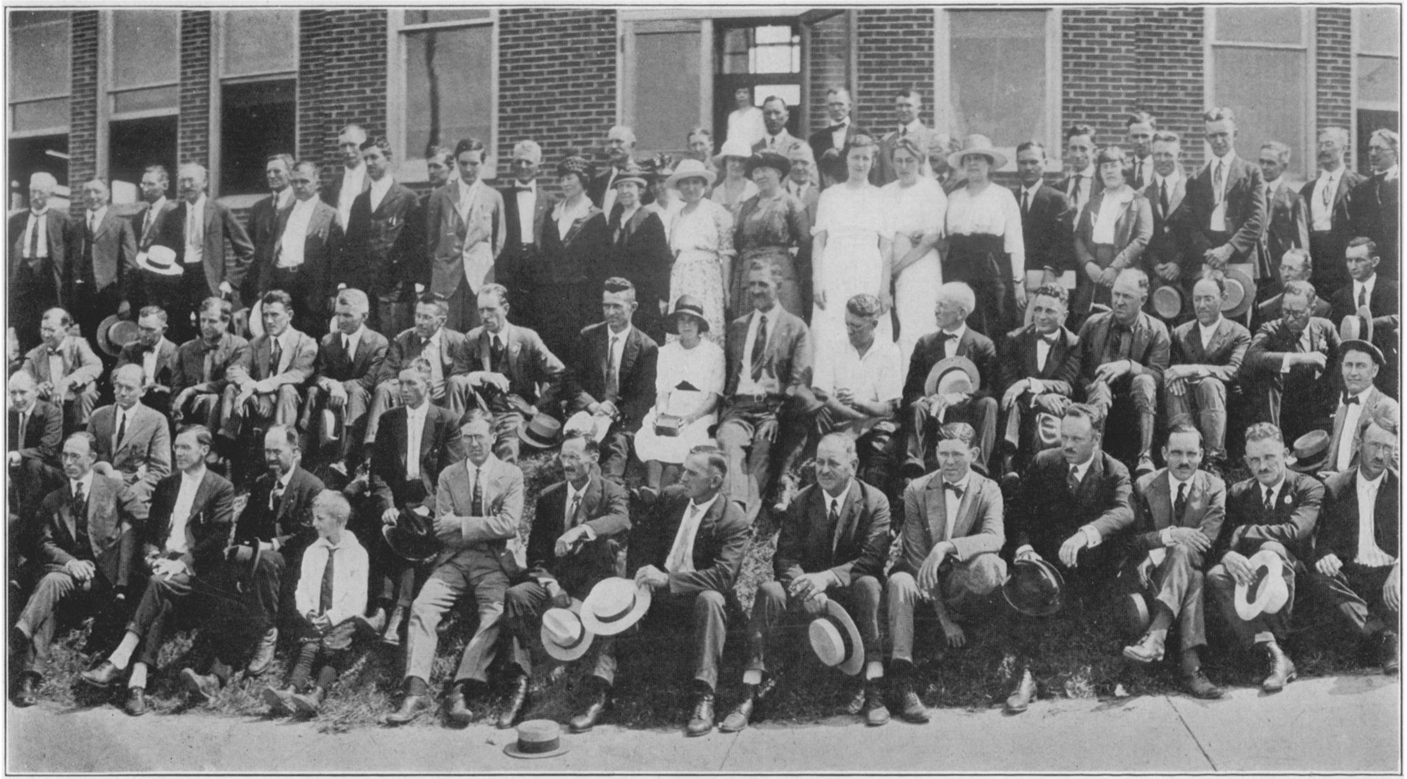
We shall never forget the informal talk given by Dr. Brierly in the peach orchard Thursday morning. The audience sat on a shaded, elevated terrace looking out on a wonderful valley, while the speaker gave an immensely interesting account of the plant diseases in England. Silver-leaf was very bad on apples, plums, etc., while Nectria canker and brown-rot were among their worst orchard diseases. Potato-wart was terrible, often taking 100 per cent. of the crop. Dr. Brierly said this was the only case he knew in which the host was either entirely susceptible or entirely immune. The mycological flora of the soil was also touched upon as an exceedingly important field of investigation.

The accompanying photograph, showing a number of those in attendance, was taken at Arendtsville, Pennsylvania, after a 35-mile drive over the mountains through the Mt. Alto State Forest of 25,000 acres.

The visit to Gettysburg was greatly enjoyed, and another excellent photograph was taken which I should like to reproduce if space allowed. The effects of shot and shell on forest trees were much in evidence on the battlefield, where one white oak was noticed with 18 bullet-marks in the lower part of its trunk. In a low spot in the forest, near a spring, the white ash trees were all seriously affected with a heart-rot caused by *Fomes fraxinophilus,* many sporophores of this fungus being observed on the trunks.

The meeting Friday evening, at Gettysburg, was devoted to impressions, results, plans for the future, and a general summing-up of the phytopathological situation. Prof. C. R. Orton presided and called upon Jones, Waite, Ball, Whetzel, Brierly, Lyman, and others to make impromptu addresses on various subjects. It was the general opinion that the meeting had been a most decided success.

On Saturday morning, a number of the pathologists, including Brierly, Foëx, Rosatti, Stevenson, Bain, Whetzel, Kern, Adams, Orton, Torrey, and others, journeyed by automobile from Gettysburg to Lancaster and thence by trolley to Ephrata, where Mr. Olsen showed the co-operative experiments on tobacco being conducted by the U. S. Department of Agriculture and the Pennsylvania Agricultural Experiment Station. At the farm of Professor E. K. Hibshman, the visitors saw numerous strains of tobacco growing under the ideal conditions of this region. The



A PHOTOGRAPH TAKEN AT ARENDTSVILLE, PENNSYLVANIA experiments included not only a tobacco strain test but also studies on various fertilizers and rotations. In connection with the field studies, difficulty has been encountered with the root-rot disease caused by *Thielavia basicola* and the plant pathologists of the Pennsylvania Agricultural Experiment Station have been called in to assist in testing the various strains of tobacco for resistance to this disease. This season, six strains were being tested on infested and noninfested soil and marked differences were noted. One strain is apparently highly resistant, though not immune, to root-rot. It will produce a good crop beside other strains which will be a total failure.

Dr. Lyman was fortunate in having such able and obliging associates on his committee of arrangements. Fromme was in charge in Virginia, Giddings in West Virginia, Temple in Maryland, and Orton in Pennsylvania. Dr. Waite represented the Department of Agriculture.

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